

AD 653296

**SOME ADVANTAGES AND DISADVANTAGES OF SMALL SCALE INDUSTRY
IN A HIGHLY INDUSTRIALIZED ECONOMY***

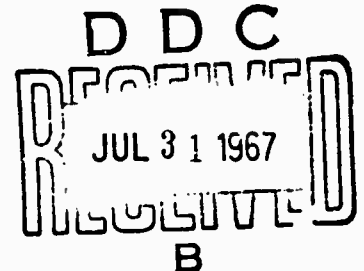
**Stillman Bradfield
Kalamazoo College**

and

**Anibal Del Aguila
Peru-Kalamazoo Project**

1967

**Technical Report #3
Contract No. N00014-67-A-0098-0001
Order No. ARPA order 852**



***This work was carried out under financial support from the Advanced Research Projects Agency, Department of Defense. The contract with Kalamazoo College is administered by the Group Psychology Branch of the Office of Naval Research.**

Distribution of this document is unlimited

RECEIVED

AUG 1 1967

CFSTI

9

ABSTRACT

The survival of many of the small scale manufacturers in Kalamazoo is explained in terms of the special flexibilities and opportunities they possess which enable them to isolate themselves from the competition of larger producers, and occupy a special niche in the market. Close, personal contact between the owner-manager of a small manufacturing plant and his employees, suppliers and customers enable him to give special attention when required, and also to be able to obtain good technical advice when needed. Inefficiencies resulting from a lack of specialization of personnel are in part compensated for by the costs avoided when the manager fulfills all of these functions himself.

SOME ADVANTAGES AND DISADVANTAGES OF SMALL SCALE INDUSTRY
IN A HIGHLY INDUSTRIALIZED ECONOMY

Introduction

In an earlier report, "Institutional Obstacles to Industrial Development in Peru," a number of problems facing industrialists in Peru at the present stage of development were specified. In that report, we concentrated on the structural aspects of underdevelopment that could be readily identified and the interrelationships between them. We did not make any specific distinctions between the problems facing large and small scale industry in Peru. Since then, we have spent six months working in Kalamazoo, Michigan on both large and small scale industry, and would like to summarize in this report some of our impressions about small scale industry. The advantages of large scale manufacturing processes and organizations have been well spelled out in the literature, and so will be ignored in this report. Small scale industry has received less attention in the literature and in some ways has more relevance to countries such as Peru than comparisons between gigantic organizations. In order to sharpen the contrast, we shall restrict our attention to those industries employing less than 50 workers, rather than the 500 workers normally used in descriptions of small industry in the United States.*

Small industry plays a very important role in Kalamazoo county, since 183 of the 268 manufacturers and processors listed by the chamber of commerce are of this type. Old-timers in Kalamazoo claim that the amount of small industry in the county was an important factor in Kalamazoo's ability to withstand high unemployment in the 1930's. Apparently, Kalamazoo did not suffer in the depression to anywhere near the extent that centers of large scale mass production did. Since so many small scale manufacturers and processors do survive the competition from the giants in American industry, they must have some advantages to offset their disadvantages. But before looking at the positive aspects of their situation, it would be well to specify some of the difficulties and disadvantages that these small industries face.

Disadvantages of small scale industry in Kalamazoo

In a way, one can simply turn around all of the advantages claimed for large scale industry and note that the absence of these advantages constitutes a disadvantage for small scale producers. That is, a small manufacturer cannot achieve the high division of labor, he cannot afford large numbers of specialists, and cannot normally hope to achieve any of the economies of large scale purchasing, production, or marketing. He is at a competitive disadvantage in hiring and retaining skilled personnel, not only because of generally lower wages and fewer benefits than the larger companies provide, but also because the small outfit offers less chance of advancement to its personnel.

The small manufacturer cannot afford to take many of the long-run risks involved in possibly slow acceptance of a new product. He generally finds himself in a much tighter financial situation with regard to receiving credit from banks, and in some cases suppliers, and less able to give credit to his customers. Because the owner-manager must perform a great variety of functions, not only can he not achieve the efficiencies of a large scale industry, but in many cases standard procedures such as careful cost and inventory controls will be by-passed altogether. Similarly,

*See appendix for list of firms studied.

he cannot afford the high marketing costs involved in a massive advertising campaign, nor do his financial resources permit a sustained sharp price competition with any of the larger manufacturers. He lacks resources to hold out for any considerable amount of time in a price war.

Given the scale of his operation, the small number of personnel involved, and his scarcity of both time and resources, little attention can be paid to the fine points of manufacturing, for example, plant layout. Machines tend to be placed in order of their arrival at the plant over time. There seems to be little strain to consistently improve efficiency. In fact, occasionally one finds a manager who deliberately does his operations in a different fashion, knowing that it's less efficient, but justifying it on the grounds that it avoids boredom.

To say that the small manufacturer fails to achieve many of the advantages of the large scale manufacturer is not to say that all of them are outside his grasp. In many cases, it is simply a question of his lack of knowledge of these techniques, or of giving them low priority in the distribution of his time. For example, cost accounting and inventory control are techniques which are certainly available to anyone, yet we rarely find small manufacturers making any systematic use of them.

Given the success over time of these small organizations, there must be either ways of getting around the above mentioned difficulties or some compensating advantages available to the small industrialist.

Advantages and compensations of the small industrialist

To offset his inability to hire and retain high level personnel, the small manufacturer can make use of the labor that is "left over" in the labor market. That is to say, he frequently hires women and older male workers. Some products have a high seasonal demand in the summertime, for example, mattresses and bakery products such as rolls and buns. In these cases, the manufacturer can make use of student help during the summer vacation. With only a few workers, he is in a better position to understand and deal with his personnel as individuals than is the case in large manufacturing concerns. Presumably, the worker in a small manufacturing plant also has more of a feeling of being appreciated as an individual and less of a feeling of being a cog in a gigantic machine than he would in a modern assembly plant.

The owner also has the advantage of being in close personal contact with his customers, and is therefore able to be responsive to changes in demand for his products and satisfy the special requirements of various customers. Small firms possess more flexibility than large companies in being able to make changes in procedures within the plant, since they have no large bureaucracies through which they must operate. Along this same line, they usually do not have to deal with outside formal organizations such as labor unions, since these plants are frequently too small to be organized.

While the small firms normally cannot obtain the volume discounts from their suppliers that large manufacturers are able to get, they nevertheless get as good quality, prompt delivery, and frequently receive good technical advice. Apparently, there is enough competition among machinery companies and suppliers of raw materials to insure the small manufacturer of good quality, prompt delivery, frequently some credit, and technical advice. It is normally in these latter areas that suppliers try to out-do each other in competition, much to the advantage of the producer.

An important factor which should not be overlooked is the motivation and commitment of owner-managers to the survival and success of their companies. They frequently work extremely long hours in order to survive, apparently preferring their independence to a higher return for their labor working for somebody else.

The survival of the small manufacturer in Kalamazoo depends more on his filling a specialized niche in the market, than on any technical advantages which accrue to him. In the cases we have studied, we find that they normally satisfy one or more of the following conditions: (1) A specialized demand that is too small in volume to be worthwhile for a big manufacturer. Sometimes it is only a small amount which needs to be produced; other times it is a demand for a relatively unique product involving considerable skill in its production. For example, printing dies are frequently made in companies of this size. Similarly, clothing, handicraft manufacturing, such as pottery, and other types of individualized demands are met generally by these small companies. (2) The need for specialized service at irregular times is best satisfied by some small local manufacturer. For example, Kalamazoo boasts a one-man battery manufacturer who not only builds batteries to measure for truck fleets locally, but will rebuild old batteries for his customers. This simply is not a feasible operation for a large corporation, and yet it is economical for the customer to use this service. (3) A need to satisfy local market demands in terms of fast, frequent delivery of fresh products--for example, bakery products and meat packers. At present, a number of small bakers are still surviving the competition of the large bakers, even on standard items such as bread and rolls supplied to hospitals, schools and other large institutional consumers. Their future, however, is increasingly bleak on the standard items, since the large bakers are now able to achieve the economies of large scale production, coupled with a fast delivery system. Since new advances have been made in food preservation they are making increasing inroads on the markets formerly dominated by local bakers. (4) Where bulky products are made through an assembly process, after buying all supplies in their final form. In these cases, the small industrialist needs only a modest amount of capital and space to contain the machines necessary for assembly of these products. This seems to be one of the factors favoring the survival of a one-man mattress factory, a one-man battery company, and various soft drink bottling plants.

One of the cases we studied in considerable detail which illustrates both the advantages and disadvantages of the small manufacturer is the one-man mattress factory. A brief description of this operation will demonstrate how a single person can deal with the structure of advantages and disadvantages that he faces owing to the small size of his operation. Working by himself, he performs all operations in the assembly of both mattresses and box springs, acts as his own salesman, and after hours makes deliveries in his truck. He buys all of the supplies that he needs from some 14 different companies in various states, and simply assembles the mattress and box spring at his shop. He also sells pillows and beds which he buys in finished form in order to offer a complete bed service to his customers. The normal procedure is for him to work at his store from nine to five on Monday, Tuesday, Thursday and Saturday, and nine to nine on Wednesdays and Fridays. In the front of the establishment he has a small showroom containing four or five beds completely set up and a few things, such as other beds and pillows. Behind the partition is the main part of the plant, where all of the inventory of parts is stored, assembly takes place, and his inventory of finished products stands. The customer entering the front of the store rings a bell upon opening the door, and the owner stops assembling mattresses to come out and attend to the customer. If he has nothing in stock that the customer wants in terms of the combination of size, degree of firmness, and color

of cover, he writes an order and will deliver in anywhere from one day to one week, depending on the needs of the customer. He is thus in a position to offer any combination of size, degree of firmness, and color that a customer may wish. His prices are well below those of normal furniture stores, although large chains such as Sears-Roebuck will occasionally approach his normal price during sales. He guarantees his product for ten years, and uses the best possible materials. For example, he buys his mattress springs and box springs from the ~~size~~ spring manufacturer as one of the leading manufacturers in the United States. During the summer, when demand is abnormally high, he has two students to work with him to turn out the mattresses and box springs. He occasionally uses part-time help during the rest of the year when he is unable to keep up with demand.

If we look for some of the reasons for his success we find that he is able to achieve some of the economies of larger producers by joining with four other small one-man plants in other towns in southwestern Michigan under the same brand name. This permits them to achieve some economies in the purchase of larger amounts of their supplies, as well as economies in advertising on TV and in the newspapers. Most furniture stores calculate they must have a 100% mark-up over the price they pay in order to compensate for the slow turnover, the amount of capital they must have tied up in a large variety of products, and for payment of their sales force and rent on a large amount of floor space. Our hero avoids these costs by having only a very small space in his factory devoted to a showroom and being prepared to put together any product that is desired, even custom sizes and shapes, such as large, round beds. Besides selling beds and individual units to customers, he occasionally gets some institutional business which requires special sized mattresses with special covers. He reports good service from his suppliers, and prompt delivery under acceptable credit terms. He gets a 2% discount if he pays within ten days and otherwise pays the net cost within thirty days. If any of his suppliers were to fail to render satisfactory service, he could readily change to others.

The disadvantages this man faces in competition with the larger companies, which derive from his inability to set up a fast assembly line, are in part compensated for by group purchasing of supplies and advertising, and his being able to save on transportation costs, respond to the precise demands of his customers, and offer a high quality product at a low price. He achieves these latter economies largely through foregoing a normal retail outlet with consequent space and sales costs. An examination of his books indicates that he is making a satisfactory living, but at the cost of many hours of work. Sometimes he wonders if it's really worth it.

In principle, many of the advantages of small scale manufacturers in a place like Kalamazoo should apply in developing areas such as Peru, owing to the relatively low inputs of scarce and expensive capital required, and relatively high labor inputs. Detailed studies of small manufacturing concerns in Peru are to be undertaken by the Project later this year, and comparative data will be reported as it becomes available. We expect to make very precise comparisons on a number of variables which will allow us to distinguish which of the problems mentioned are common to small industrialists in both countries, those which are matters of quantitative difference only, and those which are also qualitatively different.

APPENDIX

Data About 9 Small Factories in Kalamazoo, Michigan - 1967

<u>Companies</u>	<u>Products</u>	<u>Number of Regular Workers</u>	<u>Hourly Wages</u>	<u>Advertising</u>	<u>Company Customers</u>	<u>Company Sales</u>
Meat Packer	Sausage, Ham and Bacon	15	\$1.85 - \$2.85	None	Institutions	\$40,000/month
Bakery "A"	Sweet food	50 (2 shifts)	\$1.40 - \$2.50	None	Institutions and Retail	\$30,000/month
Bakery "B"	Simple bread, and buns (hot dogs & hamburgers)	22 (1 shift)	\$1.40 - \$2.60	Radio, on streets	Institutions	\$65,000/month
Battery	Batteries and Rebuilding Service	Owner only	-----	None	Big Factories and individuals	\$3,000/month
Mattresses	Mattresses and Box Springs	Owner only	\$2.25(Part time)	T.V., News-paper	Individuals	\$6,400/month
Engraving Dies	Small and artistic Steel Dies	2 + Owner	\$4.00	None	Big Companies	No Data
Mechanical Shop	Dies and molds for printing and plastic industry	2 + 2 Owners	\$3.50 - \$4.00	None	Printing and Plastic Factories	-----
Printer	Printed Matter using multilith and offset lithography	8	\$1.40 - \$3.40	None	Few big companies and individuals	\$10,000/month
Foundry	Non ferrous castings: Brass and Aluminum	15	\$3.30 - \$3.70	None	Mechanical shops	-----

Observations:

1. Only the Foundry has a Labor Union.
2. Institutions are: Restaurants, Colleges, Hospitals and Factories

DOCUMENT CONTROL DATA - R & D

Security Classification of title, body of abstract and indexing annotation must be entered when the overall report is classified.

1. ORIGINATING ACTIVITY (Corporate author) Kalamazoo College, Kalamazoo, Michigan 49001 Stillman Bradfield Advanced Research Projects Agency		2a. REPORT SECURITY CLASSIFICATION Unclassified	
		2b. GROUP	
3. REPORT TITLE Some Advantages and Disadvantages of Small Scale Industry in a Highly Industrialized Economy			
4. DESCRIPTIVE NOTES (Type of report and, inclusive dates) Progress report on field work			
5. AUTHOR(S) (First name, middle initial, last name) Stillman Bradfield and Anibal Del Aguila			
6. REPORT DATE July 1967		7a. TOTAL NO. OF PAGES 7	7b. NO. OF REFS
8a. CONTRACT OR GRANT NO. N00014-67-A-0098-0001		9a. ORIGINATOR'S REPORT NUMBER(S) 3	
b. PROJECT NO. ARPA order 852		9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
c.			
d.			
10. DISTRIBUTION STATEMENT Distribution unlimited, but further work is to be undertaken in Peru before publication. Copies of this report have been sent to interested parties in Peru.			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY Advanced Research Projects Agency Department of Defense Washington, D.C.	
13. ABSTRACT The survival of many of the small scale manufacturers in Kalamazoo is explained in terms of the special flexibilities and opportunities they possess which enable them to isolate themselves from the competition of larger producers, and occupy a special niche in the market. Close, personal contact between the owner-manager of a small manufacturing plant and his employees, suppliers and customers enable him to give special attention when required, and also to be able to obtain good technical advice when needed. Inefficiencies resulting from a lack of specialization of personnel are in part compensated for by the costs avoided when the manager fulfills all of these functions himself.			